**K-5 Math Lesson Plan**

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| **Teacher: Falkener** | | | **Grade: 5th** | | | **Date(s)**: August 2012 |
| **Unit Title:** Unit 1 Understanding the Decimal Place System | | | | **Corresponding Unit Task:**  2012 Summer Olympics-*Displaying Decimals*  **(Day#1, of task 2)** | | |
| **Essential Question(s):** How do I read, and use decimals to the thousandths using standard form (base 10 numerals), word form (number names), and expanded form? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**  <http://lrt.ednet.ns.ca/PD/BLM/table_of_contents.htm>  vocabulary cards (see below),  base ten blocks | | **Student:**  Vocabulary cards, base 10 blocks, student math journals, pencil, paper, place value chart. | | | Ones, tens, tenths,  hundreds, hundredths, thousand,  thousandths, rods, flats,  cubes, unit cubes,  decimal, equivalent, model | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  √ 1. Make sense of problems and persevere in solving them.  √ 2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  √ 4. Model with mathematics.  √ 5. Use appropriate tools strategically.  √ 6. Attend to precision.  √ 7. Look for and make use of structure.  √ 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  **5.NBT.3a Read, Write, and compare decimals to thousandths**  **Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, *e.g. 347.392=3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).*** | | | | | |
| **I Can Statement(s): I can read decimals to the thousandths using base ten numerals.**  **I can read decimals to the thousandths using number names.**  **I can read decimals to the thousandths using expanded form.**  **I can write decimals to the thousandths using base ten numerals.**  **I can write decimals to the thousandths using number names.**  **I can write decimals to the thousandths using expanded form.** | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  Begin with a *matching* *concept game* for students in small groups (2-3). Each group will receive a bag of vocabulary words and base 10 blocks to aide in matching of each word/concept. Once all students have had a chance to complete the activity the teacher will review answers as a whole group activity before introducing the lesson of the day. | | | | | |
| **Teacher Directed:** The teacher will introduce the lesson by reviewing the given vocabulary words-using pictures, words, and models. The teacher will write the number 31 on the board. Then using the base 10 blocks, will show that there are multiple ways to represent that number; a flat with 31 shaded blocks or 3 shaded rods+ one unit cube. (see figure A) The teacher will explain that the largest piece in a set of base 10 blocks given will represent the whole in most cases. Then referring to *figure B*, the teacher demonstrates how the same model can represent parts of wholes/fractional portions/decimal form. In *figure* *C*, the teacher models how to use base 10 blocks to represent a decimal number with **whole and parts.** Explain to the students that the largest base 10 unit given in this set is a flat which will represent the whole. The parts of the whole (decimal form) are represented by the shaded parts on the flat. In *figure D* the largest base 10 unit given is the cube so each cube represents 1 whole.  Figure A   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  | ═ | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | ***Flat*** |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | | --- | |  | |  | |  | |  | |  | | ***Rods*** | |  | |  | |  | |  |  |  | | --- | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |  | | --- | |  |  |  | | --- | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |   31 31  ***Unit Cube***  Figure B   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  | ═ | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | ***Flat*** |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | | --- | |  | |  | |  | |  | |  | | ***Rods*** | |  | |  | |  | |  |  |  | | --- | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |  | | --- | |  | |  | |  | | ***Unit Cube*** | |  | |  | |  | |  | |  | |  |  |  | | --- | |  |   0.31= 31/100 0.31= 31/100  Figure C     |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | ***Flat*** |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | ***Flat*** |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |   **1.31**  Figure D  ***Cube***  2 wholes (2,000 units)  *\*pictures may not be drawn to scale*. | | | | | |
| **Guided Practice:**  Teacher will place students into cooperative learning groups. Distribute the following items to each group: 5 flats. 9 rods, 9 unit cubes, and a set of decimal number cards, and student math journals. (values need to be less than 6) Students will display a representation of the number on their card, using the base 10 blocks and then drawing it in their journal. Students will show these numbers: 0.89, 5.75, and 1.12. At the conclusion of the activity, each group will have at least 3 different representations for each number: in standard form (base ten numerals), model with base ten blocks, and a visual drawing in their journals. Teacher will circulate and assess while students work cooperatively in groups. The teacher will answer any questions and provide guidance as needed.  \**examples of student responses*    0.05  Standard form  (base ten numerals)  drawing    Models, using base ten blocks   |  | | --- | |  |      |  | | --- | |  |  |  | | --- | |  |      |  | | --- | |  |  |  | | --- | |  | | | | | | |
| **Independent Practice:**  Students will be asked to give the standard form or visual representation of the following decimal numbers given in *table Z*.  Table Z   |  |  | | --- | --- | | Picture | Base 10 Numeral | |  | 4.6 | |  |  | |  | 0.3 | |  |  | |  | 1.07 | | | | | | |
| **Closing/Summarizing Strategy:**  Teacher will prompt students for a “Ticket out of the door” journal entry as assessment of comprehension. *(example* of problem and solution given)  **= 5.62** | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| * Have students create the expanded form for the numbers given in table Z as well as problems given during guided practice. * Have students compare and order numbers in ascending order and descending order. * Have students convert (2) of decimals given during guided practice to fractions. | | | * Have students practice reading large numbers with decimal values, **aloud**. ( #’s from lesson) * Number line up activity. * ([http://mathwire.com/numbersense/morepv.html )](http://mathwire.com/numbersense/morepv.html%20)) * Reduce number of problems given during independent practice. * Have students give base 10 block value only. (In lieu of drawing models.) | | | •Abbreviated form of task provided after the original task if needed.  Writing to Learn: After key points in the unit (after each task?), have students write in a journal using the following sequence:  •Record: state what they have learned  •Compare: Students pair up and compare what they have written and clarify.  •Revise: Based on the interaction, students create a more developed and polished version of their statements.  •Combine: Students collaborate to mesh their summaries  •Review: Students use previous entries to prepare and guide them through subsequent tasks.  • (Adapted from “Writing to Learn” by Robert Marzano in Educational Leadership, February 2012.) |
| **Assessment(s):** Informal assessments will be completed during guided practice by monitoring and observing student interactions and journal entries. | | | | | | |
| **Teacher Reflection:**   * What went well? * How can I improve? * How can increase time on task/rigor? * Were there any holes in the lesson? * Which things did students struggle the most with? * What were their successes? * What students need remediation? | | | | | | |
| tenths    A tenth of these 100 blocks is highlighted.  http://www.mathsisfun.com/definitions/images/one-tenth.gif  One part in ten equal parts.  1/10th  **Tenths** | | | | | | |
| |  | | --- | | hundredths  **Hundredths**  One part in a hundred  equal parts.  1/100th  **)**    A hundred of these 100 blocks is highlighted.  http://www.mathsisfun.com/definitions/images/one-hundredth.gif |     decimal  A number that uses a decimal point followed by digits as a way of showing values less than one. | | | | | | |

thousandths



One part in a thousand

equal parts.

1/1000th